

VIRGINIA

WILDLIFE

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ONE DOLLAR



Out on a Limb



*"And indeed there will be time
To wonder, 'Do I dare?' and, 'Do I
dare?'
Time to turn back and descend the
stair,
With a bald spot in the middle of my
hair—
...Do I dare
Disturb the universe?
In a minute there is time
For decisions and revisions which a
minute will reverse."*

—T.S. Eliot, from the poem "The Love Song of J. Alfred Prufrock"

It has always baffled me how a string or cord, leader or line can become mysteriously knotted up. When we intend to make a knot, we must pay attention to our loops and curls and both ends, but when we are not at all interested in barrel or clinch knots; when we would rather coil or uncoil a yard or two of delicate thread smoothly and effortlessly, we face a tangled mess.

For that very reason, I've become fond of fly line, for it seems to be so much more even-tempered than the gossamer-thin 2 lb. test monofilament that twists and turns in the wind and invisibly latches and loops around rocks and sticks. Fly line lays in the hand easily and isn't tempted by the slightest puff of air; it doesn't threaten to twist itself into knots unless abused. Truthfully, it seems to follow its own nature, to simply arc back and snap forward, all in liquid smoothness.

Nonetheless, tangled messes seem to predominate in our world these days, most of them much more bothersome than fishing line, because they can't easily be snipped through or cleanly bitten off. They're the kind of knots that have been made over a couple of hundred years; the kind that have turned back on themselves, circled over and under, and become so tightly strung together that it seems hopeless or

saintly or just plain crazy to try to work the knots out.

In fact, I sometimes think that we shield ourselves from the despair of ever solving our complex problems by disconnecting ourselves from them. For example, we discuss the health of the planet in dispassionate, scientific terms, objectively charting ozone depletion levels, meticulously calculating the acreage lost each year to development, and duly noting the doubling of the human population.

Perhaps in an effort to preserve our own sanity, we've reduced the Earth to a curiosity, with grave problems to be analyzed, monitored, and reported upon. The solutions may elude us, but the situation does not leave us heartbroken. After all, the Earth is neither mother, father, sister or brother anymore. Her blood does not flow red and warm as our own.

But it was not always so. There have forever been tangled patterns in our history. And some have found that it is only by leaving home that we learn how to untangle the knots.

It's not an uncommon thought; examine any civilization and you will unearth the timeless story of the journeyer who traveled far—who pitched himself out of the day-to-day realm of experience—and returned with the wisdom to save a people.

I looked up the word "vacation" in the dictionary recently. Directly above it is the word "vacate," and both seem to have the same Latin root, "vacare," which means "to be empty." I don't suppose that many of us think much about emptying ourselves of all our baggage when we go on vacation and then sharing tales about how our heads were turned upside down, or how our feelings and thoughts changed when we returned. Undoubtedly, we are thinking more about enjoying ourselves than filling up on new ways of living.

Perhaps that's the American Way. Others learn from us and we learn from ourselves. We do not ask the questions. On the contrary, we have always supplied the answers.

Nevertheless, when you step outside your territory, when you allow your eyes and not your camera to record the pictures, the boundaries relax and the possibilities surface in a language different from your own.

But, it's not easy to communicate new ideas, inspirations, and understanding. A great philosopher once said, "The best things can't be told. The next best things are misunderstood." How do you find the words, for example, to explain what makes a cave a sacred place of worship for thousands of years, or inspires a people to speak in hushed tones about their land and their past? We have our own riddle of the Sphinx to solve, and we're having trouble untying our tongues.

Perhaps that's why we don't spend much time trying to share complex thoughts with one another, the kind that push themselves upon us on a quiet trout stream or in a land far away from home. Often, we simply allow those thoughts to simmer inside instead.

Still, I feel such ideas may stir new possibilities within us for untangling our lives. I can't help but think that someday they might unfold on the tongue and in the heart as easily as a high-dollar fly line on a bamboo rod, and arc as effortlessly and smoothly in a clean, uruffed direction. Indeed, a beautiful cast needs no explanation.





Switching to light tackle may be the answer to a memorable season of bass fishing this year. Turn to page 17 for details; photo by Soc Clay.

VIRGINIA WILDLIFE



Cover: The great blue heron (photo by Bill Lea) is one of the many species of birds associated with our coastal wetlands. Several pristine sites on our coastal rivers have been chosen for long-term monitoring efforts. Read more about it beginning on page 22.

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Dedicated to the Conservation of Virginia's Wildlife and Natural Resources



Lives of the

by Joseph C. Mitchell

Within the borders of our state, small, secretive vertebrates we humans are only now beginning to appreciate lurk, crawl, scuttle, and leap. Salamanders are numerous here, diverse, beautiful to behold, and a sensitive component of the environment. These long-tailed amphibians occupy terrestrial and aquatic habitats throughout Virginia, and the

Hidden in the mountain springs and seeps of our state are animals as colorful as those found on any coral reef, and their lives are just as fragile.

public's recognition of their sensitivity to environmental changes has caused land managers to focus increasing attention on them.

Many, although not all, of the salamanders of Virginia require

water or moist areas for reproduction and survival. Ponds and other areas of open water are recognized by most people as important habitats for many of these animals. However, we do not often think of small, natural patches of wet ground at the headwaters of small streams or below spring outflows as valuable habitats for these native species. Nevertheless, seepage areas and springs are homes for many plants and animals, including salamanders.



Rob and Melissa Simpson

Of all the salamanders found in Virginia, the species classified in the family Plethodontidae are those that are most often found in seepages and springs. These salamanders are restricted to such moist habitats because, unlike most vertebrates, they have no lungs. Instead of taking in air by breathing, gases must be dissolved in water and then exchanged across their moist skin.

Not only are these animals restricted in habitat, but exchanging oxygen and carbon dioxide across the

skin is a slow process and limits their body size. A giant lungless salamander, for example, would still be under 10 inches in length.

The southern Appalachian Mountains harbors the highest diversity of this secretive group *in the world*. Several species in this group were described in the October 1993 issue of *Virginia Wildlife*. Here, I describe others that display a wider range of colors and patterns and inhabit spring and seepage wetlands.

Turn over a rock or log in a seepage area in the southern Appalachian Mountains and you are likely to uncover a member of the genus *Desmognathus*. Though these are



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perhaps the least colorful of the lungless salamanders, they are among the most common vertebrates in seepages and spring outflows, where they play important roles as predators and prey.

Identifying this group from others is relatively easy due to the presence of a light, diagonal eye-jaw stripe. The most widespread member of this group is the northern dusky salamander (*Desmognathus fuscus*). This brownish salamander with a mottled belly and keeled tail occurs in seepage areas throughout much of Virginia. The northern

dusky overlaps the range of the southern dusky salamander (*Desmognathus auriculatus*) in the southeastern third of the Commonwealth. This salamander has a row of white spots along its lower body and tail. Its favorite habitat, or at least where field herpetologists can find them most often, is the wet seepage areas along the floodplains of coastal plain streams.

The Appalachian seal salamander (*Desmognathus monticola*) occurs in many of the same habitats as the northern dusky salamander, but is limited to the mountains and several outlying ridges in the western Piedmont. Its name comes from its behavior of perching like a seal on rocks at night in small mountain streams. Dark brown to black spots on the back and an unpatterned belly characterize this species.

Of all the members of the genus *Desmognathus* found in seepages, the mountain dusky salamander (*Desmognathus ochrophaeus*) is the most variable and sometimes the hardest to identify. One usually has to catch it to check for the round



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Opposite: Long-tailed salamander.
Top: Northern dusky salamander.
Middle left: Southern dusky salamander.
Above: Mountain dusky salamander.
These salamanders are the least colorful of the lungless salamanders, but are among the most common animals in the seepages and spring outflows where they play important roles as predators and prey.

rather than oval tail base. Mountain dusks can be found among the leaves and under logs and rocks in moist forests when the soils are wet, but they retreat underground and to seepages when the forest dries out.

The brook salamanders in the



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genus *Eurycea* are brightly-colored animals that one can sometimes find in seepages and springs, especially in late fall and occasionally throughout the year. They are more slender and petite than the robust desmogs. Until recently, the two-lined salamanders were all grouped into a single species, *Eurycea bislineata*. However, scientists looking at the proteins derived from their genes determined that the three former races were indeed separate species. Un-

fortunately, they can be difficult to distinguish externally. All possess the yellow background color and have two dark lines bordering a broad yellowish-brown stripe along the back.

The northern two-lined salamander (which retained the scientific name *Eurycea bislineata*) differs from the southern two-lined salamander (*Eurycea cirrigera*) in having 15-16 vertical grooves along the side between the front and back legs rather

than 14. Although the distribution patterns have not been well worked out, northern two-lines appear to occupy the northern half of the Commonwealth, whereas southern two-lines occupy the southern half.

Of the three species, the easiest to identify and the most restricted geographically is the Blue Ridge two-lined salamander (*Eurycea wilderae*). This species occurs in Virginia only in the seepages and moist forests on top of Mt. Rogers, Whitetop, and nearby mountains. The two lines along the back are broad and black and the background yellow is much more vivid than in the other two species. Females lay their eggs deep within wet seepages emanating from springs in the forest.

Long-tailed salamanders in the genus *Eurycea* occur throughout Vir-



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The northern two-lined salamander (middle row, far left) and the southern two-lined salamander (bottom row, far left) are very difficult to tell apart. The photos above simply show the variations in color which can occur within populations, between populations, and even as a result of differences between body temperatures when photographed. Top: Appalachian seal salamander. Middle row, middle: Blue Ridge two-lined salamander. Above: Long-tailed salamanders occur throughout Virginia. Left: Three-lined salamanders occur in lower elevations east of the Blue Ridge.

ginia. They can be found in seepages in lower elevations and along the small streams derived from springs. The three-lined salamander (*Eurycea longicauda guttolineata*) occurs in lower elevations east of the Blue Ridge Mountains. Adults and immatures possess three black lines on a tan background and a greenish-gray belly.

The long-tailed salamander (*Eurycea longicauda longicauda*) occupies similar habitats west of the Blue

Ridge. Adults are yellowish orange with vertical black markings on the tail. Both races have considerably longer tails than other lungless salamanders.

We know of only one stream in northern Virginia where these two races come in contact, and taxonomists remain unsure of the evolutionary status of these salamanders. Some maintain that the three-lined salamander should be elevated to full species level (e.g., *Eurycea guttolineata*) based on the geographic separation, but others are unwilling to commit to such a decision without additional data on genetic differences. This is but one example of our incomplete knowledge of the relationships of these salamanders.

Another small and colorful plethodontid is the four-toed salamander (Hemidactylum scutatum).

This species occurs in seepages and wet areas associated with hardwood forests, especially those containing sphagnum. It is characterized by four toes on all feet (other salamanders have five on their hind feet), a constriction at the base of the tail al-

lowing for easy breakage, and a white belly with black spots.

The most robust of all the lungless salamanders found in springs and seepages are the pseudotritons. The red salamander (*Pseudotriton ruber*) has small, irregular black dots on a reddish background and reaches up to about 7 inches in total length. One seldom finds more than the occasional individual during field forays, so uncovering one of these big guys under a log in a seepage area is always a treat. They can be found throughout Virginia except for the Eastern Shore and in the extreme southeastern corner.

The red salamander is sometimes confused with the mud salamander (*Pseudotriton montanus*), which occurs in the coastal plain, southern piedmont, and southwestern portions of the Commonwealth. Mud salamanders are reddish-brown with circular black dots numbering fewer than those found on red salamanders. Look for them in the muddy areas associated with springs and in all manner of seepages.

Although lungless salamanders are primarily predators of insects and other invertebrates, one species makes a habit of eating other salamanders in addition to invertebrates. The spring salamander (*Gyrinophilus porphyriticus*) is the largest of the lungless salamanders in Virginia, reaching a maximum total length of just over 8 inches. Its body is salmon to orange-yellow with a variable amount of black flecking. A distinguishing feature is the black-bordered white line that runs from the eye to the nostril.

Spring salamanders are true inhabitants of freshwater springs. When searching for this species, I first check the spring head. One or two individuals often can be seen walking on the sandy bottom through the clear water. They also occur in small and clean mountain streams where they act as a major predator on other plethodontids. Spring salamanders are restricted to the Virginia mountains and several outlying ridges in the western piedmont.



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The four-toed salamander (top) occurs in seepages and wet areas in hardwood forests, and is the only salamander with four toes on all four feet (all other salamanders have five toes on their hind feet). The red salamander (above), which reaches up to 7 inches in length, is a rare find under logs in seepage areas. Right: The mud salamander occurs in muddy areas in the coastal plain, southern piedmont and southwestern part of the state.



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Admittedly, this is an incomplete catalog of salamanders (others occur in and out of Virginia) found in springs and seepages, but it demonstrates the wide range of diversity one may encounter in these small wetlands. Every spring and every seepage area has its own combination of lungless salamanders, as long as it is not polluted.

In the mountains, one can find spring salamanders, reds, duskys, seals, and two-lined salamanders in many springs and their associated seepages. Locations eastward are homes to muds, reds, duskys, and two-lined and three-lined salamanders. Wetlands of this sort with the right kind of vegetation could also harbor four-toed salamanders.

How does this diversity change when humans alter springs and seepages? Some literature on spring management and protection advocate modifying these wetlands in ways that are not compatible with their native inhabitants. Digging out the area to form a small permanent pool or enclosing the spring head in

a watertight collection box could alter natural water flow to associated seepages. Such changes can restrict salamander access to the spring itself and cause the outright extinction of some species there. Allowing domestic animals unrestricted access to a spring leads to trampled seepages and the possible introduction of disease, pollution agents, or alien plants.

Natural springs and seepages have intrinsic and practical value to native species and to humans. Human alteration of these wetlands has contributed to the decline of the amphibian fauna. Although we are certain that even Native Americans altered springs for their use, the more recent and greater scale of habitat loss since the 1600s is one of the factors that has contributed to the alarming, widespread amphibian decline we are experiencing today.

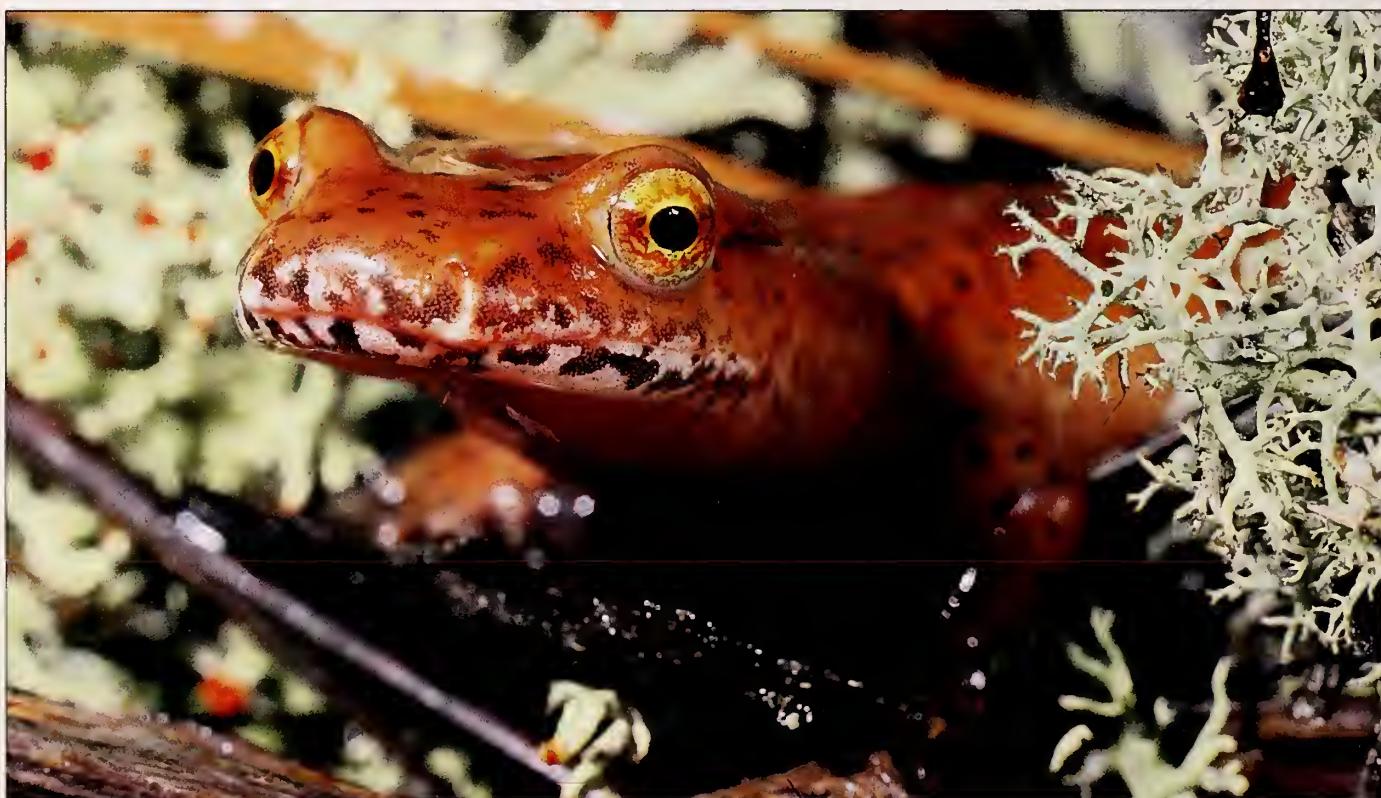
Although we are pretty sure that no salamander species has become extinct in Virginia for at least 300 years, we are certain that all of these

species have declined substantially in numbers. The reason is obvious to anyone who looks for natural habitats in the human-altered landscape. Many vertebrate and invertebrate species are in danger of extinction today simply because of the decline in the number of places in which they can live.

Springs and seepages are homes to many more native species than the colorful salamanders shown here. Landowners with such wetlands on their property have a choice. They can leave them in a natural state or alter them in ways that threaten the survival of the native wildlife.

The presence of secretive, lungless salamanders provide a window into the fascinating biological world of springs and seepage areas. Without a doubt, they, along with the rest of our native wildlife, deserve our protection. □

Joseph Mitchell teaches conservation biology at the University of Richmond and was the principal researcher on VDGIF's reptile and amphibian survey.



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True inhabitants of freshwater springs, spring salamanders are the largest of the lungless salamanders, reaching just over 8 inches in length. They make a habit of including other salamanders in their diet.



Cardinal on nest

Avian Artistry



Our birds are consummate artisans when it comes to building their nests.

Story and illustrations
by Spike Knuth

One of the most fascinating experiments I've ever read about concerned the release back into the wild of weaver finches which had been kept in captivity through three or four generations. During those years in captivity, the birds had no access to any kind of nesting materials, yet when their offspring were re-

leased, they reportedly began building nests in the same way their ancestors did four generations ago!

Birds seem to come by nest building naturally, and each species builds exactly the same type of nest as their kind before them. Almost all are skillful at their trade.

Some species build small nests, just enough to accommodate the bird. Some nests are expandable to grow with the brood. Others can get very large, often weighing hundreds of pounds. Nests of songbirds are almost always pocket-like. Some



Left: Cliff swallows and nests. Right: Mourning dove on nest

are basket-like. Other birds build platform-like nests, and still others build floating nests.

Birds are skillful weavers, masons, potters, carpenters and diggers. Their abilities are mind-boggling and their persistence is inspiring. Some utilize existing cavities or form their own. Others use holes in a dirt bank or dig their own. Some merely use a scrape or depression in the sand or dirt.

To cliff-nesters, manmade skyscrapers become substitute cliffs; bridges become caves. Houses,

barns and outbuildings provide nooks and crannies to nest in. Man-made birdhouses provide suitable substitute sites for cavity nesters.

Robins are probably the most common nester in our yards, nesting in cities, suburbia, parks and farms. They begin with a base of large plant stems and leaves, then begin adding finer grasses, string and the like, cleverly mixing it with mud that the bird picks up from puddles or other wet places. The hen plasters the mud on the inside of the nest, then carefully shapes it from the inside by turning around, molding it with her breast and belly. Finer grasses, rootlets and animal hair are then woven into and over the mud walls.

Watching a robin, or any bird build a nest is a good lesson in persistence. Starting from nothing, the seven or eight-inch bird will make hundreds of trips, working unceasingly to complete its task. In some instances, rains or high winds destroy all her effort. But, she doesn't quit. She'll begin all over again, working until she has a completed nest in which to lay her eggs. If only we could learn such patient persistence in all we do!

There was an instance, some years ago, of a robin building a nest on a railroad turntable. As I remember, these turntables were for redirecting the big steam engines onto tracks heading in different directions. The engine and coal car were driven onto the turntable and it was turned to match it up with the track heading in the proper direction. The robin had chosen a specific location on one of the many tracks which were like the spokes on a wheel. She had almost completed the job when the position of the turntable was changed. She came back to the spot, but her nest was gone. Of course it wasn't really, it had just been rotated to a

different position, but the bird did not have the ability nor the inclination to look for or use it. She had designs on that specific location, so she began constructing another nest, all this amidst the noisy activity of each day. Of course, the turntable continued to revolve to different positions frequently, as engines were directed to different points east, west, north south and in-between. Each time she was interrupted, she began building a new nest in that specific favored location. That little robin ultimately built or partially built no less than nine different nests! Oh, that I would have such persistence!

Robins aren't the only birds to be skilled in masonry or pottery. Mud is also used by barn swallows and cliff swallows. Barn swallows nest on beams or any place a protected flat surface is created. The inside of barns, under bridges or wharves are all popular places for the barn swallow to build. They mix straw or grass with mouthfuls of mud to form their open-topped nests lined with feathers.

Cliff swallows form gourd-shaped mud structures under cliff ledges, large bridges or tall buildings, and even in large cave-like culverts. They are gregarious and build in colonies. Cliff



swallows actually form mud pellets, which are cemented together with saliva from special salivary glands, which also serve to waterproof the structure. These "adobe villas" are lined with fine grasses and feathers.

Another family of birds that shows some interesting and unusual nesting habits are the wrens. They are known by the scientific name Troglodytidae, which means "cave-dweller." Of course, wrens do not live in caves, but some of them tend to seek out cave-like crevices or build nests that are cave-like or covered. The marsh wren builds a globular or ball-shaped nest using strands of cattail leaves, rushes or marsh grasses along with cattail

down, then lines it with fine grasses and feathers.

House wrens will nest in tree cavities or crevices, as well as readily using manmade housing. The Carolina wren and sometimes the house wren choose some unusual nesting locations. They will nest in clothespin bags, old hats, coffee cans, cooking grills, carpenter's belts left idle too long, the foot brackets of water skis and on light fixtures out the back door.

One man in Hanover County noticed a small brown bird that seemed always to be around the front windshield of his car each morning as he left for work. At first, he didn't pay much attention to it,

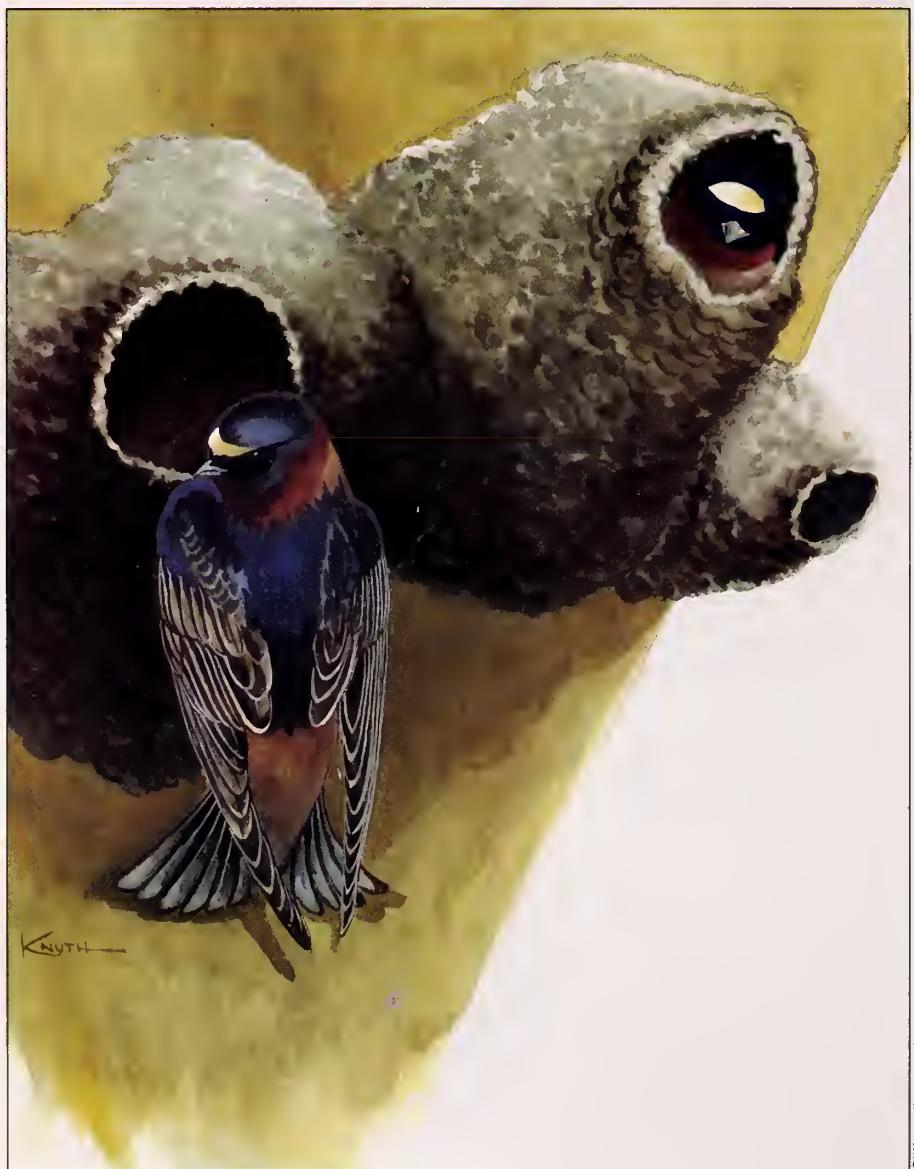
but then noticed the same bird waiting close by each evening when he returned. After a couple of days went by, he realized one morning that the bird was coming up out of his windshield wiper well when he started the car. Upon investigation, he found the nest with four tiny eggs in it. The ride to work was 10 to 12 miles to and from each day. Apparently, the engine heat was enough to keep the eggs alive and viable until returning home to the parent bird each day. He parked his vehicle for about 10 days or so, and hitched a ride with a neighbor, allowing the four eggs to be hatched and reared successfully.

Other birds we might find nesting around our home are brown thrashers, catbirds and mockingbirds, all of which build similar nests of twigs and coarse grasses. They line them with rootlets that actually help to maintain the pocket shape as they dry out. Using mostly twigs, mourning doves build a simple platform with only a slight depression. Cardinals build a nest similar to robins, but with more woody material and no mud. Orioles build higher up in the trees, weaving a basket-like nest of dried vegetable fibers, string or yarn, rootlets and animal hair.

The eastern phoebe builds under overhanging rocks, upturned root systems of large trees, under small bridges, sheds and little ledges on the house, especially the ceilings of porches. It also uses mud and grass, lining it with rootlets and feathers and covering the outside with moss.

The little chipping sparrow builds a pocket-like nest of fine grasses, rootlets, and animal hair, usually in low-growing pines or shrubs.

The variety of types, materials and locations used in nest building is fascinating. Watch your backyard this spring. You'll be surprised who is living with you. You won't get much rent out of them, but they will keep the bugs down and make life more enjoyable! □



Cliff swallows and nests

Spike Knuth is an information officer with VDGIF and an avid birdwatcher.



What's Your Line?



Fishing line has a long and memorable history of ups and downs.

by Jack Randolph

When I was a kid, we had all sorts of ways to make money. I sold magazines, such as *Liberty* and the *Saturday Evening Post*. Later, I collected and processed eggs on a chicken farm, and trapped muskrats, skunks, weasels and such. I picked everything from asparagus to yams. On frigid January evenings, I cut seed potatoes for a farmer or skinned animals for a fur buyer. Later, when my family moved back to the shore, I spent cold, winter evenings baiting trotlines for codfish. The lines were tarred cotton with hooks, also snelled with tarred cotton, spaced along the line. We baited the hooks with chunks of sea clams and we took great care to coil the lines in tubs.

Tarred cotton lines were popular when I was a youngster, and were used mostly for handlining. I remember standing along the gunwale of a pitching boat, a cotton line in each hand, jiggling Daredeville-like spoons for Boston or Atlantic mackerel that we had chummed up. We were fishing commercially and we caught a ton of them.

At one time, handlines were very popular. I visited friends in New York City in the thirties and I enjoyed watching people handline for eels in the Hudson. They also used green cotton line, but the line wasn't tarred. You could buy the line in the bait shops in those days, and they came on small wooden frames complete with a sinker and a hook. They were called "Furnished Lines" in

the trade, but we just called them handlines. Those Hudson River eel fishermen tied their lines to wires screwed into the pilings. A bell was attached to the wire to signal a bite. Years later, while stationed at Governor's Island in New York harbor, I used to cast Pikie Minnow plugs at night and catch more than a few striped bass. I could see those old piers where we fished for eels in the background.

The old furnished lines with the heavy sinker were adequate for fishing from piers and even the surf. You would coil the line in your left hand, if you were right handed, and after twirling the sinker and hook around a few times with the right hand, you'd pitch it towards Europe and hope for the best. Nowadays, instead of holding the line coiled in the left hand, the line is carefully wound on a beer can and the end of the can is pointed toward the east.

During the pre-World War II days, saltwater anglers liked linen lines, while freshwater fishermen preferred silk. Both lines had one thing in common—they rotted if they weren't cared for. Caring for pre-war lines called for taking them off the reel and drying them after each use. Some of us fished so much it was impossible to dry lines between uses, but they seemed to hold up pretty well. Actually, it was the occasional fisherman who ran into trouble. He would fish on the weekend and let the wet line sit on the reel all week. This led to rotting lines and some heartbreaking line snaps.

The old linen lines were made of twisted threads. It was generally conceded that each thread was three-pound test. The more popular lines were Nine Thread or 27 pounds or Twelve Thread or 36 pounds. Heavier lines were used

offshore, and the linen lines had to be wet to realize their greatest strength.

Freshwater silk lines were generally black in color and ranged in strength from six pound test and up. Ten pound was very popular in my circles. But, black silk line wasn't all that effective if tied directly to the plugs or spoons we used in those days. To provide that "invisible link" between the line and the lure, we used a length of "cat gut." This



Anglers don't often realize how long it took to get to the versatile and reliable monofilament line we take for granted today. Fishing line moved from tarred cotton lines to silk to stretchy nylon lines (opposite, photo by Lee Walker) before the high-performance lines used today (above, photo by Soc Clay) were perfected.

was also a silk product that was more or less transparent in the water. Some referred to it as "Spanish gut" and we used to carry lengths of the stuff in special round tins with a bit of wet felt in them. When dry, the leader was stiff, but if kept damp, it remained flexible. Of course, like silk line, it had to be kept dry between uses.

Fly lines of that age were made of oiled silk. They had evolved from lines made of horsehair strands and braided horsehair which were popular until the 1870's when oiled silk lines were introduced. For a time, combination silk and horsehair lines were used. Tapered lines, mainly double tapers, were made of horsehair and then silk. Both double-taper and weight-forward tapers were in use a little more than a 100 years ago.

with fly fishermen, lasting nearly 70 years, succumbing to nylon a few years following World War II. Actually, after the war, fly lines were made of several materials, all of which differed from silk in weight for specific diameters. This led to chaos among fly fishermen because it was difficult to find lines that would match the fly rods. Unlike spinning or bait-casting anglers, the fly fishermen depends upon the weight of the line to carry the fly to

210 grains with a latitude of 202 to 218 grains.

To assist anglers in matching up the correct line and fly rod, fly rod manufacturers began showing just above the handle on the rod shaft the size line the rod was built to accommodate.

In addition to the weight, fly lines are designated by taper and their floating characteristics. The tapers are "L" for level, which is no taper at all; "DT" is a double-taper, which is a line that is tapered at both ends, usually used for delivering smaller flies; "WF" which is a weight-forward taper designed to deliver heavy air-resistant flies and poppers; and finally, "ST" single-taper which I see as half of a double-taper.

The designation "F" means floating line and "S" designates a sinking line. There are other designations such as the sinking tip line and others.

A DT-6-F fly line is a double-taper, size 6 floating line. A WF-8-F line is a weight-forward, size 8 floating fly line. Instead of being called weight-forward lines, some call some of their lines "bug" or "torpedo" taper, both of which are really weight-forward lines.

I remember one synthetic fly line that sold during the second World War that was absolutely horrible. It looked sort of like today's monofilament lines, but it cracked and fell apart for no reason, and when it wasn't falling apart it was twisting itself into a hopeless tangle. Only the anglers' desperation for line during a war could make this stuff sell—even once.

Immediately following the end of World War II, a great deal of twisted nylon line, a war surplus product from the manufacturers of parachutes and other war materials hit the market. The stuff was dirt cheap, came in camouflage green color and it was strong. It was about 60-pound test, although the diameter was about the same as nine-thread linen.



The silk fly lines were calibrated according to their diameter and the diameter had alphabetic designations starting with A, the largest, to I, the smallest. Somewhere in the recesses of my memory I recall lines that were heavier than A. I believe they were designated "AA," but I could be mistaken. Because all lines were made of the same material, silk, an "A" diameter of one brand line would weigh the same as an "A" of another brand. Actually, weight is more important than diameter because it is the weight of a line that brings out the action in a fly rod.

The silk lines enjoyed a long run

its destination on the water.

In 1961, after about 10 years of headaches, the American Fishing Tackle Manufacturer's Association, with help from the Outdoor Writers Association of America and casting experts, developed a new standard for fly lines. Under this new standard, the weight of the line in grains became the criteria instead of the diameter. The first 30 feet of the line, measured from the beginning of the taper, is classified by weight sorting the lines into basic sizes of 1 through 12. A No. 1 line, for example, is the 60 grain weight with a tolerance from 54 to 66 grains. The most common bass and bream line, Size 8, is

The problems were twofold. The stuff was not abrasion-resistant and it stretched like a rubber band.

Another product developed during the war hit the market at about the same time—fiberglass fishing rods. When the glass rods teamed up with the stretchy nylon, we had the formula for disaster.

In those days, a chrome-plated diamond-shaped brass spoon was very popular for trolling for false albacore. If you have ever tangled with a false albacore, you can appreciate the pressure these seagoing torpedoes put on the rod and line. Sometimes with the rod bent to the breaking point and the line stretched to the maximum, a hook would pull out. Under this strain the spoon would go ballistic and fly back towards the cockpit of the boat at warp speed. Spoons were being dug out of cabins, transoms and fishermen, but it was exciting!

Fortunately, for the safety of all concerned, hard-braided nylon lines appeared on the market. Names like Ashaway, Courtland and Dot were well-known among anglers. These lines had some of the stretch removed, were more resistant to abrasion and they laid better on the reel. A bit later, Dacron lines appeared and this material was heavier than nylon. Some casters liked Dacron because its relative weight "cut the air" better and led to longer, more accurate casts. However, Dacron never made it as a casting line, but it still enjoys a certain amount of popularity as a saltwater trolling line.

During those early nylon days, the saltwater angler depended upon stainless steel piano wire to provide that invisible link to the lure. In fact, stainless steel wire is still used by many in saltwater. I still use it and I carry my stainless steel wire leaders in an old fashioned "gut" leader box which is ideal for the purpose. Today, however, many fishermen prefer heavy monofilament or nylon coated braided wire leaders.

Unlike linen line, nylon does not get stronger when wet. In fact it is a little weaker. Also, there is no need to dry nylon lines between uses. It doesn't rot. However, sunlight can

cause nylon lines to deteriorate if left exposed for long periods of time. For this reason, anglers are advised not to carry fishing reels in cars where they are exposed to a great deal of sunlight.

While braided nylon was almost an instant success among fishermen, monofilament line had a more difficult time of it. I remember seeing a spinning reel in a 1935 Hardy's Catalog. It was some years after 1935 when I came across the catalog, but I wondered why it took so long for open-faced spinning reels to be accepted. The reason, of course, was the line. The pre-World War II lines of silk, cotton and linen were not compatible with spinning reels. Nor were the first monofilament lines. In fact, the most satisfactory spinning line in those early post-war days was a braided monofilament.

The problem with the early monofilament lines, was that they were too stiff and wouldn't lie flat on a spool, and they had far too much stretch. At the time, monofilament didn't have many fans, but over the years the lines became easier to handle and the stretch was finally brought under control.

A good monofilament line should have good knot strength. It should resist abrasion and have little stretch. It should also have as small a diameter as possible for its strength.

Cheap lines, often sold in bulk at low prices, are seldom a bargain. They seldom have the knot strength, small diameter, lack of elasticity and abrasion resistance of premium lines. I remember fishing for bluefish with a fellow who had just loaded his reel with cheap line. He was reeling in, or trying to reel in, a big bluefish when his reel jammed. Looking it over, we discovered that the bluefish had stretched the line so thin that it expanded after it was on the spool and the pressure was off. The line expanded so much, it popped the ends off the reel spool, hopelessly jamming the reel. A new spool was required to repair the reel. Fortunately, most of the stretch is out of good nylon these days.

Monofilament nylon leaders are used to provide that "invisible link"

between a fly line and the fly. Good tapered leaders can be purchased or anglers can make their own. Stiffer leaders made from "hard" nylon work better than those made of limp nylon. Generally, the so-called "leader material" that comes in 10 or 20-yard spools isn't leader material at all. They are short lengths of spinning line which are generally too limp to become good leaders. However, it is possible to obtain hard monofilament for leaders. I get mine from the Mason Company, the only maker of hard nylon of which I am aware.

Some lines are made for the purpose of getting baits down deep in a hurry. Single-strand monel wire line is generally conceded to be the line that will take a lure almost straight down, if aided and abetted by a heavy sinker. The angle of the line from the rod tip is nearly perpendicular. Braided wire line is almost as good, but it doesn't go down deep quite as well as the single-strand stuff. There is also a lead core line that sinks slower than either of the other two. When I was in Japan, I fished with Japanese who used lines that had tiny egg sinkers clamped about every six inches to bring the line down and to lessen the angle from the angler to the bait.

The trend is to make lines thinner and thinner and anglers are using lines that are lighter and lighter. Not long ago, I saw a fellow struggling with a big fish in the surf on the Outer Banks. His rod was bending dangerously and a huge fish swirled and ran down the beach, but the fellow doggedly hung on.

As I approached, I was amazed to see that there was no line on his reel.

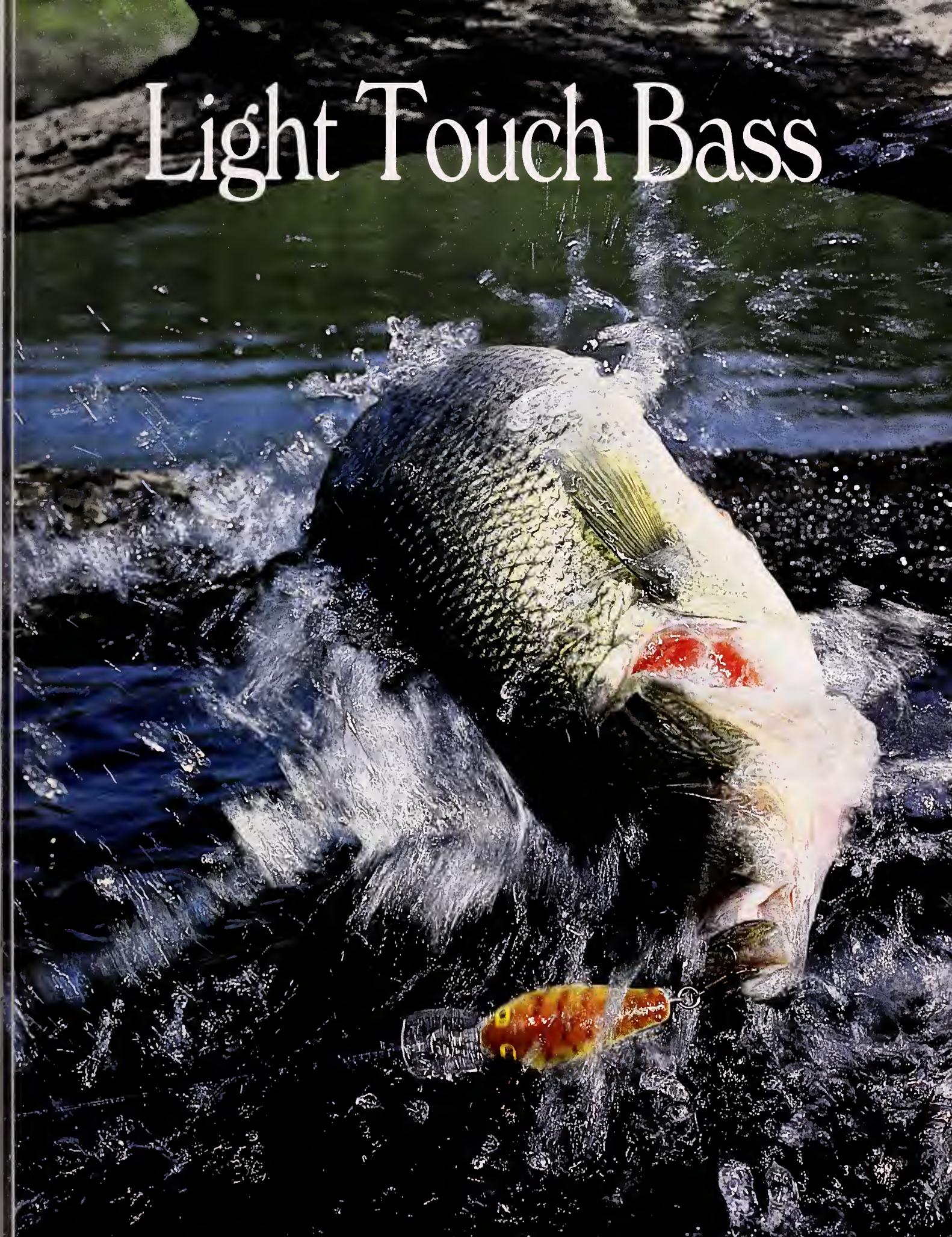
"You have no line!" I said incredulously.

"Yeh, I know," he grunted through clenched teeth. "Those outdoor writer fellas have been saying you should go to lighter and lighter line, so I decided to do away with it altogether."

Who knows? Maybe that time will come!

Retired VDGIF assistant director Jack Randolph is an avid fisherman and freelance outdoor writer.

Light Touch Bass





Soc Clay

by Gerald Almy

The plastic worm landed with a plop beside the blow-down where it disappeared into the sparkling waters of Philpott Lake. Like a poised heron, Curtis Hodnett was a study of concentration as he stared at the spot where his line entered the water. Suddenly he lurched into life, rearing back on the graphite rod and reeling simultaneously.

The unseen quarry bucked hard in resistance, then stripped line from the reel before giving in to the relent-

less pressure of the rod. Reaching down, Hodnett grappled the three-pound bass by the lower lip, twisted

Bass anglers can take a tip from trout fishermen—go light for results!

out the hook and gently released the fish.

If you had to guess what kind of outfit Curtis Hodnett was using

when he caught that bass (and about 12 others that morning), what would you say? Most experienced anglers would figure he employed a heavy bait-cast rod, 17 or 20-pound line, a 4/0 hook and a 6 to 8-inch worm. Typical bassing tackle.

Wrong. On that trip over 20 years ago, Curtis was using a light spinning rod, six-pound line, a 1/0 hook and a four-inch worm. Such tackle was revolutionary back then in the early 1970's, when most bassers wanted to "cross the eyeballs" of every largemouth that pecked at their lure. But that day I spent with Hodnett fishing Philpott for a mix-



ture of large and smallmouths was an eye-opener for me. Since then, as more and more fishermen have begun to seek out bass, the lesson I learned from him has become even more important. In short, Curtis showed me that the light touch is often more effective on bass than heavy-duty gear, thick line and big, clumsy lures.

It was potent approach back then. It's even more productive today in the 1990's with fishing pressure having intensified on the state's lakes and rivers, and bass becoming more and more discriminating about which of the dozens of lures they see

that look good enough to nab.

Bass anglers can take a lesson from trout fishermen in this regard. As catch and release became more popular on trout streams and was even required by law on some, fishermen learned that lightening up and refining their offerings often resulted in more picky fish being fooled. Bass fishermen can also increase their catch of a quarry that is sometimes fooled and released several times in a lifetime by lightening up in gear, line and lures.

Even bass pros, who hate to lose a single fish because of light line when it can mean points lost towards winning a high-dollar tournament, often carry several light spinning rods on board their well-equipped boats these days. The reason? They realize that sometimes scaling down is the only way to fool their quarry—even if it means an occasional fish breaking off.

The experience with Curtis Hodnett also illustrated two other situations where using the light touch can pay off for bass. Philpott Lake is close to an urban area and receives heavy angling pressure, making its fish warier than those in more remote, lightly-tapped lakes. And secondly, it's a particularly clear lake, making subtle lures and thin lines virtually the only way to score consistently.

Certainly there are times and places when the light touch is inappropriate for bass fishing. When the quarry is ensconced deep in thick vegetation or fallen timber, when the water is murky, and when very large fish are a possibility, you won't want to scale down to ultralight. But for most largemouth fishing situations in Virginia (and virtually all smallmouth fishing on our rivers such as the Shenandoah, Rappahannock and James), light or ultralight gear is the way to go.

Exactly what size line to use will vary with the conditions. As a rule of thumb, six pound is appropriate for most largemouth fishing where the typical catch will weigh 1-4 pounds. If snags are present, move up to eight. If you're fishing on a bronzeback river or in especially clear

water, scale down to 4 pound.

This size line works best with an open-faced spinning outfit. Eight pound and even six can be used effectively on some of the new light-weight bait-casting reels being sold, if you're a diehard level-wind fan.

Rods require careful consideration. For fishing small crankbaits and thin-minnow plugs, a light or even ultralight rod can be employed. For the majority of light-touch bass fishing, however, you'll want a rod that is stiffer than most people associate with this specialized sport. The reason is that with the severe line stretch that characterizes most monofilaments sold today, you need a stiff rod to be able to set the hook in a bass. By adjusting the drag so that it slips just before the breaking point, you don't have to worry about popping the line, and the fast-action rod will allow you to drive the hook home in fish even with 4-pound test.

To make this system succeed, however, hooks must be needle sharp. Use an automatic sharpener such as the Hook Hone-R or a good file such as those sold by Luhr-Jensen to renew the points as you fish. With this type of tackle you can catch incredibly big fish. How big? Well, my friend Fred Kesting, of the Shenandoah Valley, took a 13-pound bass on 4-pound line using a plastic worm. My top ultralight bass was considerably smaller than that, but my biggest striper ever—a 20-pounder—succumbed to a 5-foot ultralight rod and 6-pound line. Refined tackle doesn't have to mean small fish.

Not only is it often more effective, light gear such as this is less tiring to use over the course of a day. Catching fish is also more fun once you connect, because you have to use some finesse in fighting the quarry instead of just cranking it in against a clamped-down drag and hoisting it aboard.

An amazing variety of lures appropriate for light tackle bass fishing is available in tackle shops, department stores and mail-order catalogs. Here's a rundown on my favorites for catching bass on light gear.

Mini-crankbaits. Most people think of crankbaits as huge lures that require 7-foot rods and wrist-numbing reeling all day. Scale down, though, to the lightest versions made and you'll find it takes very little effort to wind in these offerings because their lips are so much smaller than standard versions and they displace less water. Most crankbait companies make their offerings in "mini" sizes and Rebel makes a variety of special purpose ultralight crankbaits that score heavily on bass as well as panfish. A slow to moderate steady retrieve is the best presentation with all of these varieties.

Another good lure to stock is the vibrator, also known as the *lipless crankbait*. These lures such as Spots, Rat-L-Traps, Rattlin' Raps and others have only recently been offered in tiny models and they have proved deadly on largemouths as well as smallmouths in rivers. Try working them back steadily, then suddenly pausing when the lure reaches a dropoff or deep water, so it falls abruptly like a wounded shad. This is when strikes often occur.

Spinnerbaits in the typical standard largemouth sizes of $\frac{1}{2}$ -1 ounce are not appropriate for light touch fishing, but try $\frac{1}{8}$, $\frac{1}{16}$, even $\frac{1}{32}$ -ounce versions such as the Beetle Spin, Foxee Spin, Mister Twister and the new Berkley Power Spin. These offerings balance beautifully with a light spinning outfit and 4 or 6-pound test line. They can be bumped on the bottom or ripped in just under the surface when fish are in an aggressive mood.

Topwater offerings are exciting to fish on any tackle, but particularly so with thin line. Go with the lightest versions available, such as the Zara Puppy, Heddon Tiny Torpedo, Baby Lucky 13, Rebel Pop R and others. Natural finishes, plus yellow and black are top colors. Work these at dawn and dusk, during the night, and at any time on rivers, with gentle twitches or a "walking the dog" rhythmic retrieve. Hesitate a second or two after the fish takes, to make sure you don't pull it away too quickly, then set the hook by sweep-

ing the rod back and reeling simultaneously.

When bass are feeding near the surface but slightly less aggressively, opt for *thin minnow plugs* such as the Rapala, Rebel, Bang-O-Lure, Thunderstick and Long A. The best

sizes for use with light tackle are 2-4½- inchers. Top colors are silver or gold with a black back and fluorescent orange and with gold sides.

Grubs and *tube lures* come into their prime with light tackle gear. Use $\frac{1}{16}$ - $\frac{1}{4}$ ounce leadheads with



Gerald Almy



Gerald Almy



Gerald Almy

Small plastic worms (above) are excellent for light-touch bass fishing with 4-6 lb. monofilament, as are small-sized crankbaits (left) and lightweight spinnerbaits (bottom).

twister tail or paddle type grub dressings or tube lures which hide the head of the jig inside the soft plastic dressing. Top colors include chartreuse, motor oil, smoke, pumpkinseed, watermelon, and clear with salt and pepper. These lures often draw strikes on the drop, so watch the line as the grub descends and set the hook at the slightest twitch or hesitation.

If a fish doesn't take, begin your retrieve when the lure reaches or approaches the bottom. Try a steady crawling motion with occasional pauses and also experiment with twitching the lure or hopping it back. These lures are excellent for pond and lake largemouths as well as river smallmouths.

A rigging method I've found

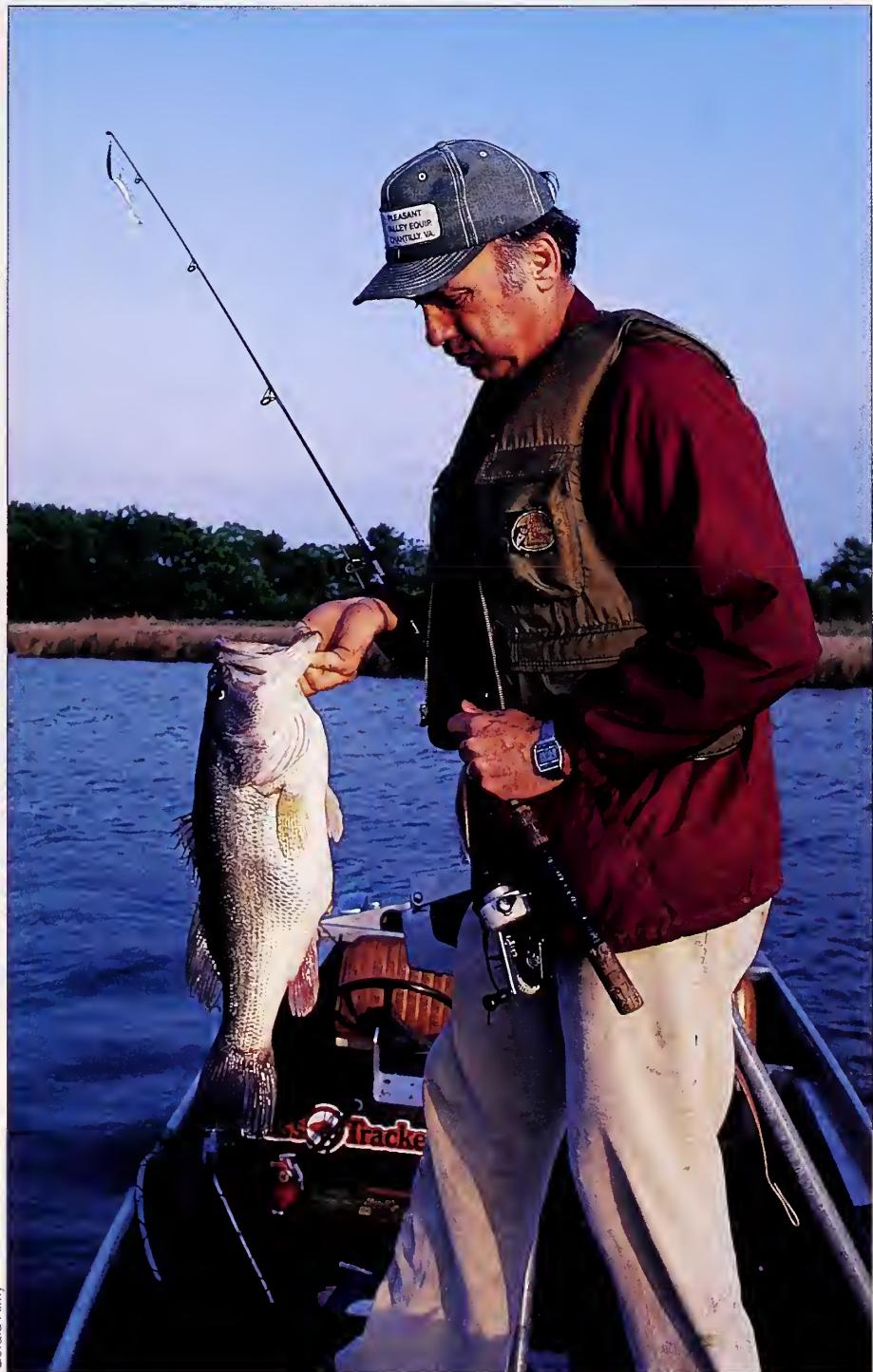
deadly when using grubs and light tackle is the Carolina system. First take a 24-48-inch section of 4-6-pound line. To the end of this, attach a short-shank split-shot type hook in size 4 or 6. Impale a grub on it by just penetrating an eighth to a quarter-inch into the tip of the plastic. Then tie this leader to a barrel swivel. Thread a $\frac{1}{4}$ - $\frac{1}{2}$ ounce sinker onto the main line from the reel and tie it to the other end of the barrel swivel. It's a bit of a bother to rig and awkward to cast, but this setup can be devastating. When you feel a fish tap, simply keep reeling and it will hook itself more often than not.



Gerald Almy

This same Carolina rigging style works very well with double-hook pre-rigged plastic worms in the 4-inch size. This is the final offering I use for light-touch bass fishing. You can use a regular Texas-style rigging with the hook buried in the worm, but I find you'll catch more fish with light gear by using the double exposed-hook worms. Top colors include purple, brown, smoke, blue, black, red and pumpkinseed. Reel these back slowly and steadily around points, stumps, weedbeds, submerged brush and bridge pilings with 4 or 6-pound line and chances are you'll encounter more action than you ever dreamed possible when fishing with standard heavy gear and 20-pound tackle. And when you do connect, even a two-pound bass will fight like a trophy on the refined gear. □

Gerald Almy has been a full-time outdoor writer for over 17 years. He is currently a hunting and fishing editor on the staff of Sports Afield.



This 8-pound bass was taken on light tackle, and grubs (above left) are one of the best offerings you can pair up with light gear.



Checkups on Nature

by Bland Crowder

The Memorial Day sun hadn't cracked the morning chill when Arun Bose, Teta Kain and Rob Breeding hopped the port side of the *Osprey* to wade ashore at one of the Goodwin Islands at the mouth of the York River. The trio scanned the heron rookery in the tall pines of the marshy islet, hiked through wet marsh grass tallying the willets they saw (including four chicks), hoped they'd find a nest of the Northern harriers they'd seen weeks earlier, looked for sharp-tailed sparrows in the saltbushes, and recalled the six tundra swans they had seen an hour earlier.

A look at a special monitoring effort on our rivers.

"They're very late," Teta Kain said of the swans seen flying over the York River near the Coleman Bridge connecting Yorktown with Gloucester Point. "Most of them went north over a month ago," she said as the 26-foot, shallow-draft boat entered the river and headed east.

This trip capped eight consecutive weeks of work in the Goodwin Islands and three sites in the York River basin as part of a long-term monitoring project funded by a partnership between Virginia and the

National Oceanic and Atmospheric Administration of the U.S. Department of Commerce.

Created in 1991, The Chesapeake Bay National Estuarine Research Reserve in Virginia is one of 22 such reserves nationally and is administered by the Virginia Institute of Marine Science (VIMS), a part of The College of William and Mary. The Virginia Reserve's pristine sites were selected to meet simple but important goals: to protect the estuary's natural resources, to conduct estuarine research that will aid coastal decision-making, and to make a significant contribution to estuarine education in Virginia.

Its design makes the Reserve perfect for environmental monitoring.

ture

Great blue heron, photo by Bill Lea

"In monitoring, we look at environmental trends over the long term, across a whole system," said Maurice Lynch, Reserve manager and a professor of marine science at William and Mary. "We're looking at a variety of factors that can indicate the health of the estuarine environment."

If you managed a skyscraper and wanted the best in fire protection, you'd install heat and smoke detectors and alarms—not just in one part of the huge building but in all parts. Environmental monitoring throughout the biggest estuary in the United States is one way to detect problems in the Chesapeake Bay system. To that end, the Reserve eventually will include some 20 sites from top to

bottom, so to speak, from tributaries to the Eastern Shore.

For the York River basin, the sites are the Goodwin Islands on the Bay at the river mouth, the Catlett Islands, Taskinas Creek, and Sweet Hall Marsh in the freshwater tidal zone. Site selection is almost complete for the Rappahannock and Potomac Rivers, and one site is proposed for the smaller Piankatank River.

"In Virginia, we have four major tributaries within the state, the James, York and Rappahannock Rivers, and the Potomac," Lynch said. "In each river's watershed, different activities are occurring. Some are more urbanized, others are more agricultural, and all are becoming more densely populated."

"If we're trying to manage the overall Bay by monitoring the York River, we'd miss changes on the Rappahannock. So we've designed a system for Virginia that will let us make intertributary comparisons and keep our eye on the whole Bay system."

For example, the Sweet Hall Marsh Reserve site is located in King William County on the Pamunkey River, one of the two main tributaries to the York. It is near Sweet Hall that saltwater from the Chesapeake Bay reaches its upper limit in the river.

The location of this saltwater-freshwater "line" changes as a function of various factors, the amount of rainfall, for example. The line typically shifts west of Sweet Hall Marsh in the summer, when it is drier. Jim Perry, assistant professor at VIMS expects their monitoring to reveal several "marker species" that are highly sensitive to such environmental changes and thinks they might already have found one that is highly salinity-sensitive. "The Asian dayflower, *Murdannia keisak*, is very sensitive to salinity changes," he said. "It seems to respond almost seasonally." They will continue studying this species during the next few years to further evaluate its value as an indicator.

But the botanists won't focus only on indicators. "It's also important

that we continue to examine the entire plant community," he said. The plant community at the salty Goodwin Islands is markedly different from that at freshwater tidal Sweet Hall. "We will keep studying species diversity."

Key to the Reserve design is the involvement of citizens in its work, and volunteers are especially important to its monitoring program. The Reserve now monitors birds, plants, water quality, and estuarine debris, and this year will begin monitoring invertebrates, insects and fishes. With only five paid employees, the Reserve couldn't make such ambitious plans without its volunteers.

In the spring of 1991, for example, Perry, was organizing his plant sampling trips for the year, and Kain ar-



Top: Volunteer Arun Bose scans the horizon for birdlife at the Catlett Islands.

Above: The Asian dayflower is a plant which is highly sensitive to salinity changes in its environment and may prove useful as an indicator of environmental health in wetlands.



Map graphics by Pels



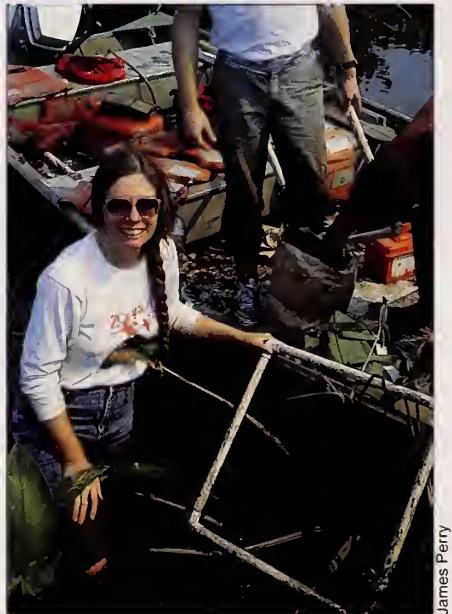
York River Research Reserve Sites

ranged to count birds while he and his volunteers counted plants. That September, monitoring coordinator Rob Breeding and Kain further expanded the study.

"We wanted to gather more baseline data," said Breeding. Kain had defined a number of habitat types which were important to census—open water, marsh, hardwood forest, pine forest, mixed forest, field, forest edge. They laid their transects to cover the habitat types found at each Reserve site, counting every bird they saw or heard, each day noting various environmental data, such as air temperature, water temperature, sky conditions, wind direction and speed.

"We were trying to determine the best methods for studying bird populations on the Reserves, and to further familiarize ourselves with the birds on each site," said Breeding. After running the baseline transects monthly for another year and a half, he and Kain felt that it was time to start the "real" monitoring.

"We needed a more scientific approach, a field technique to provide data that can be analyzed statistical-



James Perry



James Perry

ly," said Breeding. "We also wanted to use methods that would allow comparisons between data from the Reserve and from other studies."

Working closely with Brian Watts of William and Mary's Center for Conservation Biology and with Karen Terwilliger and Dana Bradshaw of the Virginia Department of

Above left: Plant sampling occurs on the York River Research Reserve sites to monitor changes over time in these pristine areas. Sweet Hall Marsh (top), Taskinas Creek (above), the Goodwin Islands (opposite top), and Catlett Islands (opposite right) are all part of the Chesapeake Bay National Estuarine Research Reserve.

Game and Inland Fisheries, Breeding and Kain settled on a point-count method in which they count for 10 minutes every bird they see or hear. The count is split into segments of three minutes, two minutes and five minutes, allowing compatibility with other bird census techniques that use 3-minute, 5-minute or 10-minute counts. Counts are made at permanent points along transects, as well as while walking between points.

In 1993, their point-count method was first used to study birds during spring and fall migrations. A weekly visit to each site for six to eight consecutive weeks, however, was too tall an order for two people.

Thus, 10 or so volunteers enabled the Reserve to meet its expanded bird-monitoring schedule. Some people volunteered armed only with a desire to help, with little if any bird study under their belts. Reserve fan Jeannie Baldwin, who has helped clean sites of debris, and last

September worked at Estuaries Day, which the Reserve co-sponsors with York River State Park, admits that she didn't know a wood duck from a wood thrush when she volunteered to help monitor birds. Serving as recorder, this registered nurse and nursing manager concentrated on tallying data, freeing up the identifiers to focus on their task. But if she continues on the project this year, it might not be as recorder.

"I'm hooked on birds, and it's all your fault!" says Baldwin, who this past winter participated in two Christmas bird counts, observed a peregrine falcon near her home, installed 13 feeders in her yard, and began boning up on field marks, the characteristics of each species that are key to identifying birds in the field.

Baldwin also hopes to volunteer with the Army Corps of Engineers in a study of the ospreys on the Susquehanna River in Pennsylvania. "This is interesting," she says,

months in India and Nepal evaluating habitats and making notes on birds, particularly endangered, threatened and near-threatened species.

In fact, many of the volunteers do have excellent backgrounds in bird study. Kain, for example, is an ornithological consultant and an avid participant in Christmas and spring bird counts in Tidewater. She also edits *The Raven*, the quarterly journal of the Virginia Society of Ornithology, and this spring will become chair of its records committee.

Kain echoes Lynch in her assessment of the importance of monitoring. "The long-term nature of this study is so important," she emphasizes, citing the dangers of basing conclusions on only one or two years' worth of data.

"In the winter of 1991-92, for example, we counted lots of solitary vireos at Taskinas Creek, but in the winter of 1992-1993 we counted much fewer." If the solitary vireo



VIMS/CBNERR/VA



VIMS/CBNERR/VA



Susan M. Glascock

The Chesapeake Bay National Estuarine Research Reserve has been created to protect the natural resources of our tidal areas, to conduct research that will aid in coastal decision-making, and to make a significant contribution to education about these resources in Virginia.

"because the Susquehanna is in the northern extension of the drainage area of the Chesapeake Bay."

Another volunteer, Arun Bose, is a British student studying art and design at Virginia Commonwealth University. Not only is he adept at identifying North American birds, but he kept bird records for a reserve area in England. He also spent six

were deemed a good indicator of environmental quality, conjectures Kain, environmental managers could get two distinctly different pictures of environmental health, depending on which year's data they based their determinations on. "You get the wrong impression if you go out for only a year or two," she said. □



Osprey, photo by Bill Lea.



William W. Jenkins

Education and ecological monitoring go hand in hand with protecting our natural resources, particularly in our increasingly populated coastal areas.



Peter Tyson

Monitoring marsh plants is some people's idea of a vacation

Jim Perry and Sharon Dewing appreciate volunteers. Each month from May through September they greet six new ones from EarthWatch who pay good money to spend a

week of their vacations working in the fly-and-mosquito-infested sauna we call the York River.

Perry, an assistant professor at VIMS, and Dewing, a VIMS wetlands ecologist, direct the plant monitoring on the sites of the Chesapeake Bay National Estuarine Research Reserve in Virginia. Helped in 1993 by Michelle Fox and Clay Bryant, they first train the volunteers to identify the most common plants at each site. Then the whole group works in the field, determining percentage cover and counting plants by species along permanent transects.

"By the time Friday rolls around, they don't want to leave," said Perry, who says some of the EarthWatchers want to come back this year for another round. "They're the most wonderful people. They're intelligent, they care, they're eager to learn." □

Bland Crowder coordinates education and communications for the Chesapeake Bay National Estuarine Research Reserve in Virginia.

NWF 1994 Conservation Directory Available

The National Wildlife Federation has published its 1994 Conservation Directory, a comprehensive listing of organizations, agencies, and officials involved in natural resource use and management. Updated and published yearly, this 504-page publication contains the names of more than 16,000 individuals and over 2,000 organizations in the United States and other countries. Federal and state officials, committees, and agencies, national, international, and regional organizations and commissions are listed in addition to hundreds of citizens' groups.

The 1994 Conservation Directory can be purchased for \$20 per copy plus shipping and handling from the National Wildlife Federation. Call 1-800-432-6564 and ask for item #79561. □

New Lakes For Anglers!

Anglers will have three new public lakes to fish in the next few years. Beginning this spring, the 38-acre Slate River impoundment, located within the Appomattox-Buckingham State Forest and managed cooperatively with the Virginia Department of Forestry, will open to fishing.

Fisheries Biologist Bill Kittrell calls Slate River impoundment "a miniature Briery Creek Lake," because a lot of timber was left standing in it. The lake has largemouth bass, many already in the 13-inch range, along with redear sunfish, bluegills, and channel catfish. It's located in a beautiful area, surrounded by forest, and can be reached off Route 24 southwest of Toga. The Virginia Department of

Game and Inland Fisheries (VDGIF) has completed construction of a gravel ramp for small boats and a parking area at the lake. No gasoline motors are allowed, but electric motors are welcome.

In the fall of this year or the spring of next, the 212-acre Great Creek Watershed Project will be open to fishing. Located near Lawrenceville, the lake has a boat ramp and courtesy pier built by VDGIF and is full of largemouth bass, redear sunfish and channel catfish.

The third impoundment is scheduled to open to fishing in 1996. The 740-acre Sandy River Lake owned by Prince Edward County, is located near Route 15. VDGIF has already built a double-wide boat ramp with a courtesy pier, and a handicapped fishing pier is planned.

For further information about any of these new fishing opportunities, contact Bill Kittrell at 804/392-9645. □

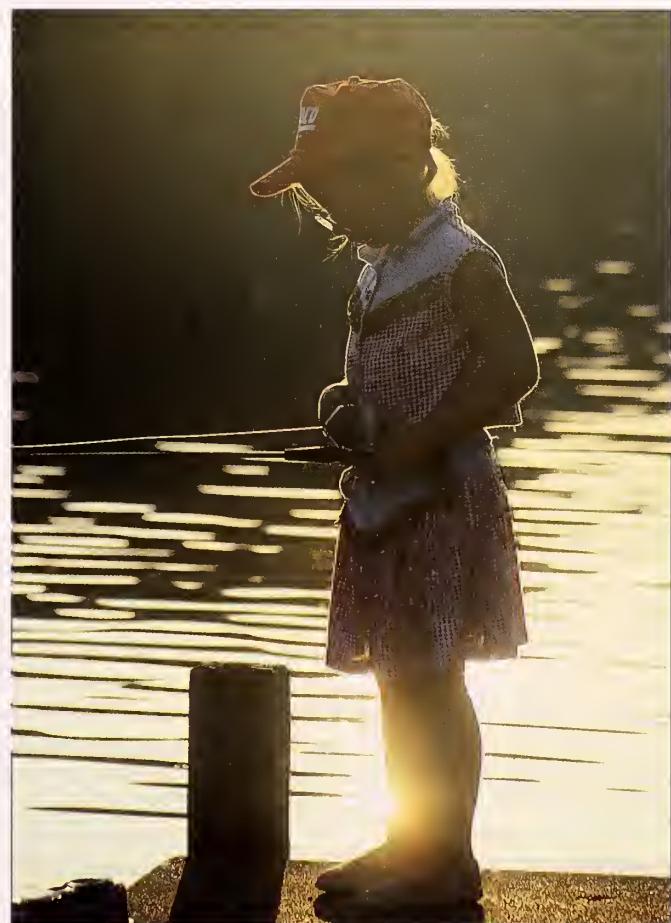
Free Fishing Guide Available

The Virginia Department of Game and Inland Fisheries has put together its 1994 *Freshwater Fishing Guide* with information on the public lakes, streams, and rivers in the state with fisheries

management activities updates. This 32-page guide also includes specific information on how to get to these fishing holes, the facilities available, and phone numbers for more information. Without a doubt, this is the one publication you will keep in your tackle box all season long. Write to us for your free copy: Virginia Fishing Guide, VDGIF, 4010 W. Broad Street, P.O. Box 11104, Richmond, VA 23230-1104. □

Go Fishing!

Borrow some tackle, rig up a cane pole, dig up some worms—'cause on June 4 and 5, you won't need a fishing license to fish anywhere in



the state (except for designated trout waters). We want you to experience the thrill of fishing with no strings attached!

Of course, we hope you'll get hooked and want more of this great sport. So, to help you with your fishing education, if you purchase a freshwater fishing license during National Fishing Week June 6-12 and this is your first-ever fishing license, we'll send you a free freshwater game fish identification poster! Just send in a xeroxed copy of your fishing license (purchased during National Fishing Week) and we'll send you a free poster. This offer is good for first-time license buyers only.

Get hooked on fishing! □

Wildflower Symposium May 13-15

Something for every wildflower enthusiast is a recurring theme at Wintergreen's annual Spring Wildflower Symposium. From beginning wildflower enthusiasts to graduate level botany students, this event with 65 trips, lectures and workshops truly has it all.

During one of the over 40 field trips, participants might find themselves looking at wild orchids and lilies along a mountaintop trail or learning how to photograph wildflowers in the field. The event also delves into the "how-to" of landscaping with native plants as well as propagation techniques for highly desirable species.

Dr. Hal Horwitz of Richmond, whose exquisite photographs often grace the pages of *Virginia Wildlife*, will present a beginning wildflower photography workshop on Saturday morning. Other experts from the University of Virginia, the U.S. National Arboretum, the Smithsonian Research Center, and the University of Maryland, will share their knowledge on everything from ferns to trees and shrubs in this event which begins Friday evening and runs through Sunday afternoon.

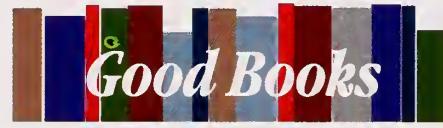
The registration fee is \$75 for the



Small Yellow Lady's Slipper; photo by Hal Horwitz

Hal Horwitz will share his secrets of wildflower photography at Wintergreen's Spring Wildflower Symposium on May 13-15.

entire symposium, plus special weekend packages are being offered for those wishing to stay at Wintergreen. For more information, call Lorrie Kries at 804/325-2200, ext. 992. □



Book Reviews

Passages to the Sea, by Ellen Gwynn. 1993. Papercraft Printing and Design Co., Charlottesville, VA. \$14.95 hardcover.

With so many Virginians making summer pilgrimages to the barrier islands of North Carolina and the Eastern Shore, here is a book which should be packed with the towels and suntan lotion, and read on the beach after the waves and the sun and sand have quieted the mind. In a leisurely style that doesn't overtax the mind in need of relaxation, Ellen Gwynn appeals to the natural curiosity of those who love the ocean, the marshes, and the life within them. We effortlessly learn what's behind the ancient rhythm of waves, the seaweed that is tossed upon the

beaches, and the natural history of mole crabs gobbled up by sandpipers. Gwynn delicately avoids the trap of boring us with too much information, and switches from birds to waves to sand to midges with an instinctive understanding of when to move on and answer the next question on the reader's mind.

Keeping All the Pieces, Perspectives on Natural History and the Environment, by Whit Gibbons. 1993. Smithsonian Institution Press, Washington, D.C. \$16.95 paperback.

Whit Gibbons, professor of zoology at the University of Georgia, invites the reader to read his 24 essays with whimsical titles like "Disguises of a Caterpillar," "The Advantage of Being a Cold Fish" and "Why you Need a Rhinoceros If You Own a Trewia Tree."

But don't let the titles fool you. Gibbons is an writer whose impassioned sermons on environmental issues would make any Southern preacher proud. If you like your reading booming with passion and belief, with the lines clearly drawn between good and evil, this is the book for you. Gibbons' book is full of anecdotes and natural history

facts about such exotic (to Virginians) species as twin-spotted rattlesnakes, alligators and panthers. Coupled with old-fashioned, finger-pointing fervor, his essays should serve to rouse even the most complacent armchair environmentalist to sit up and listen. □

Letters

The February issue of *Virginia Wildlife* is as exquisite a magazine as we can recall. It is a definite "keeper." Please let Dwight Dyke and Tim Wright know how their work of art (that's what it is) is appreciated!

Reverend and Mrs. J. Desaulniers
Rixeyville

The February 1994 *Virginia Wildlife* on the Shenandoah Valley was outstanding.

Judge E. W. Hening, Jr.

What a marvelous treat you afforded us in your February issue of *Virginia Wildlife*! How refreshing the photos and commentary! This was truly not a promotional for profit, but a down-to-earth, person to person adventure, or that is how I perceived it as the pages were turned.

Wilma H. Westbrook
Richmond

The February issue of *Virginia Wildlife* was just received, and I must say the photography and layout on the "Valley" is beautiful. While I do appreciate the issue, it is far from being what the magazine used to be, and in fact, I believe was intended to be—that is, a magazine devoted to hunting, fishing, wildlife and outdoor activity relating to these pursuits.

I have seen this trend in the last couple of years, and can't help to wonder if the staff is trying to be "socially and politically correct" in view of the recent anti-hunting and anti-fishing sentiments.

Since this is a publication of the VA Department of Game and Inland Fisheries, I am sure most of the subscribers are outdoorsmen (and

women), and not necessarily tourists in VA. I, for one, ask that you direct magazine articles more towards hunting, fishing and outdoor activities, and hope there are more folks expressing this same opinion.

Thomas D. Scanlan
Harrisonburg

Most Virginia sportsman, including myself, buy *Virginia Wildlife* expecting to see articles of interest to hunters, trappers, and fishermen. I guarantee you that very few, if any Virginia sportsmen are interested in the material in the January 1994 issue on dolphins, whales, mussels breeding habits, etc. The February issue wasn't any better. Granted: The scenery is beautiful. However, the topics belong in *Country Life* magazine or maybe a magazine named something like *Virginia Today*.

Please don't misunderstand me. Nobody appreciates the beauty of our state more than sportsmen. Being outdoors in the beauty of nature is what sportsmen live for. We are equally concerned about our waterways and keeping them clean and pure for all marine life. However, when I buy a wildlife magazine, I want to read about wildlife from a sportsmen's point of view.

It seems to me that this magazine is catering to the save-a-whale, hug-a-tree, anti-hunter, anti-sportsmen, kind of people. Apparently you don't realize you are cutting your own throat. If the environmental special interest groups had their way, they would ban all hunting and wildlife sports activities. That means no money from license fees. Let me remind you that it's sportsmen that pay the bills, i.e. your salary. I think you would be wise to remember that fact. With that in mind, don't you think you should cater to your special interest group, the Virginia sportsmen?

How about it *Virginia Wildlife*? I hope I am making my point here because, if not, I will not be wasting my money on the environmental hoopla you publish in the future.

B. L. Newcomb

It seems we can't please all of the people all of the time. Nevertheless, let's set the record straight. Flip to the inside back cover of your December 93 issue of VW. There we list an index of all the stories we ran last year. Count them up. You'll see that 38 of our 56 features (nearly 70%) pertained to hunting, fishing, float fishing trips on our rivers (complete with maps), and wildlife management. This does not include the 10 columns on boating safety, the 10 columns on wild game recipes, nor the fact that the 1993-94 Virginia Hunter's Guide produced in the September issue is the only guide we know of that contains comprehensive information on all known public hunting areas in the state (including prices for permits, addresses, and phone numbers), a map detailing the state's sporting clay ranges, and a chart detailing county by county bear, deer, and turkey kills last year. Every March in VW, you will find the only source we know of that details on separate maps the trout fishing opportunities available throughout the state.

We try our best to provide our sportsmen and women with the most up-to-date information possible on hunting, fishing, and boating opportunities in the state, along with information on how they may more safely enjoy their sports. However, we are responsible for much more than the rabbits, the deer, the turkeys, and the smallmouth bass in this state. The Virginia Department of Game and Inland Fisheries is legally responsible for the management of all wildlife in the Commonwealth. This means that, yes, we do care about the native mussels of our state, the salamanders, the toads, the yellowfin madtoms and the bottlenose dolphins of our state. We must. Furthermore, we are convinced that you can't have one without the other and still maintain a healthy environment. If we cater too much to the "other" wildlife of this state for your tastes, we are sorry. We love to hunt and fish, too, but we don't feel we deserve to enjoy the resource if we're not taking good care of it all.

—Editor

1993 Anglers

Below is a list of the anglers reaching Master and Expert status in the Virginia Department of Game and Inland Fisheries' Freshwater Fish Citation Program from January to December 1993. Congratulations to the best anglers in Virginia!

Master Angler: Each angler listed has caught 5 citation fish, each of a different species.

Expert Angler: Each angler listed has caught 10 citation fish of the same species.

Citation Sizes

Bass, Largemouth	8 lbs.
Smallmouth	5 lbs.
Striped	20 lbs.
White	2 lbs., 8 oz.
Rock	1 lb.
Bowfin	10 lbs.
Catfish, Channel	12 lbs.
Flathead	25 lbs.
Blue	20 lbs.
Carp	20 lbs.
Chain pickerel	4 lbs.
Crappie	2 lbs.
Gar	10 lbs.
Muskellunge	15 lbs.
Northern Pike	6 lbs.
Perch, Yellow	1 lb., 4 oz.
White	1 lb., 4 oz.
Sunfish	1 lb.
Trout, Brook	2 lbs.
Brown	5 lbs.
Rainbow	4 lbs.
Walleye	5 lbs.

Masters

Anthony, Calvin	
Bailey, George	
Barto, Jr., Stanley	
Beavon, Barry	
Blevins, Ronnie	
Bohn, Douglas	
Chapman, Thomas	
Chitwood, Lannie	
Coiner Jr., Blair	
Corum Sr., Michael	
Dunn, Darryl	
Fields, James	
Garland Jr., John	
Garst, Williams	
Ghoston, Thomas	

Glen Allen	
Norfolk	
Suffolk	
Spotsylvania	
Shawsville	
Norfolk	
Woodbridge	
Ivor	
Mt. Solon	
Dolphin	
Virginia Beach	
Chester	
Midlothian	
Roanoke	
Brookneal	

Experts

Adcock, Bill	
Amos, Sr., Timothy	
Bailey, George	
Bear, Jr., David	
Bell Jr., Stewart	

Hurt	
Richmond	
Norfolk	
Midlothian	
Richmond	



Lee Walker



Soc Clay

Hall of Fame



Bell, Billy	Altavista	McDaniel, Michael	Richmond
Bowles, Tracey	Roanoke	McDonald, Thomas	Williamsburg
Bradshaw, T.	Portsmouth	McDonald, Nancy	Williamsburg
Breen, Billy	Newport	Miller, James	Davidson, MI
Brooks, Jeffrey	Mechanicsville	Mundy, Tracy	Eagle Rock
Campbell, Charles	Ivanhoe	O'Neill, James	Hopewell
Carr, Bobby	Boykins	Pickenpaugh, Richard	Powhatan
Cecil, Bobby	Mt. Airy, NC	Rice, James	Suffolk
Christman, Art	Virginia Beach	Rice, Annette	Suffolk
Clements, Steve	Mechanicsville	Richardson, Kay	Suffolk
Cline, Dave	Wytheville	Rizer, Joseph	Suffolk
Cook, Harold	Sedley	Roberts, William	Madison, NC
Cook, Roy	Richmond	Rose, Pete	Suffolk
Copeland, Clifford	Virginia Beach	Rose, Buddy	South Boston
Coppersmith, Carl	Chesapeake	Rountree, Keith	Newsoms
Daniels, Ernest	Virginia Beach	Sanders, Doug	King George
Duncan, Bernard	McCoy	Sclater, Wayne	Mechanicsville
Elkins, Thomas	Chesapeake	Seay, Steven	Kents Store
Falls, Richard	Zuni	Shelton, Richard	Yorktown
Faris, Jr., Charles	Mechanicsville	Silvers, Robert	Chesapeake
Franceschini, Robert	Moneta	Smith, Larry	Blue Ridge
Giles, Ann	Ivor	Smith, Enoch	Suffolk
Giles, Robert	Ivor	Smith, Edward	Hot Springs
Gill, Roger	Richmond	Snyder, Walter	Ivor
Gillispie, Glenwood	Henry	Songer, Cliff	Narrows
Glenn, Sr., Kenneth	Richmond	Stafford, Barry	Chesapeake
Gough, John	Amelia	Steger, David	Catawba
Gray, Matthew	Daleville	Stone, Gary	Suffolk
Gray Sr., James	Roanoke	Taylor, Tommy	Narrows
Haislip, Jr., Aubrey	Richmond	Taylor, M.O.	Huddleston
Hancock, Marvin	Boones Mill	Terry, Mike	Roanoke
Hancock, Gary	Galax	Thomas, Marcus	Weyers Cave
Hardy, Jim	Virginia Beach	Thompson, Charlie	South Boston
Hart, Stanley	Lebanon	Todd, Charles	Virginia Beach
Higgins Jr., H.	Waverly	Townley, Phil	Suffolk
Hines, William	Portsmouth	Tyree Jr., Emmett	Selma
Honeycutt, Darrell	Lebanon	Vanzant, Rodney	Virginia Beach
Hurst, Dennie	Shawsville	Weaver, Steven	Suffolk
Jimerson Jr., Robert	Glen Allen	Weir, James	Virginia Beach
Johns, Jr., Robert	Richmond	Welcher, Cecil	Bridgewater
Johnson, Curtis	Pearisburg	Wells, Robert	Richmond
Jones, Michael	Portsmouth	White, Charles	Chesapeake
Kania, Charles	Suffolk	Whitmore, Joe	Colonial Heights
Keith, Gregory	Buchanan	Whittaker, Michael	Chesapeake
Kinter, Thomas	Chesapeake	Wills, George	Suffolk
Kiser Sr., Silas	Suffolk	Wilmoth, Buddy	Blue Ridge
Lamb, Kenny	Mechanicsville	Woods, David	Virginia Beach
Lang, Jr., Joseph	Virginia Beach	Worley, Edward	Gretna
Logan, Pete	Richmond	Worrell, James	Suffolk
Mabe, Darrell	Weyers Cave	Worrell Jr., Joseph	Suffolk
Martin, Melvin	King William CH	Wright, Debbie	Vinton
McCamey, Steve	Chesterfield	Wright, Brian	Vinton



Safety

by Col. William Antozzi, Boating Safety Officer

Virginia Waters Are Impressive

I have had many questions about places to boat and fish. Because Virginia is a wet state, there are plenty of places to enjoy boating and fishing. Some of the big lakes here are over 20,000 acres in size. The largest is **Kerr Reservoir** which is bordered by Halifax, Charlotte and Mecklenburg Counties. It is 48,900 acres in area. Second is **Smith Mountain Lake** which is 20,600 acres. It borders on Bedford, Pittsylvania and Mecklenburg Counties. In third place is 20,300-acre **Lake Gaston** in Brunswick and Mecklenburg Counties.

Middle-sized lakes are **Lake Anna** with 9,600 acres in Louisa and Spotsylvania Counties; **South Holston Reservoir** with 7,580 acres located in Washington County; **Claytor**, a 4,475-acre lake in Pulaski County; **Leesville Reservoir** covering 3,400 acres in Pittsylvania and Campbell Counties; **Drummond**, 3,100 acres in Suffolk County; and **Chesdin**, 3,100 acres bordering Chesterfield and Dinwiddie Counties.

Smaller lakes are **Philpott Reservoir**, 2,880 acres bordering on Franklin, Henry and Patrick Counties; **Lake Moomaw**, 2,530 acres in Alleghany and Bath Counties; **Occoquan Reservoir**, 2,100 acres in Fairfax County; **Di-ascund Reservoir**, 1,700 acres in New Kent County; **Western Branch Reservoir**, 1,579 acres in Suffolk County; **Chickahominy**, 1,500 acres bordering on Charles City and New Kent Counties; and **Flannagan Reservoir**, 1,143 acres in Dickenson County.

Each of the 16 bodies of water mentioned above is over 1000 acres and the total acreage is 134,529, which is a lot of water. Vessel horse-

power is unlimited on all of them except **Occoquan**, where nothing above 10 horsepower is permitted, **Western Branch** where the upper limit is 12 horsepower, and **Dias-cund** where only electric motors are permitted.

In addition to the above, there are 38 public fishing lakes owned by the **Virginia Department of Game and Inland Fisheries (VDGIF)**. All are under 300 acres except for one. The

Sussex; **Gordon**—157 acres (10 hp), Mecklenburg; **Thompson**—10 acres, Fauquier; **Hidden Valley**—61 acres, Washington; **Horsepen**—19 acres, Powhatan; **Laurel Bed**—300 acres, Russell; **Keokee**—92 acres, Lee; **Robertson**—31 acres, Rockbridge; **Rural Retreat**—90 acres, Wythe; **Shenandoah**—36 acres, Rockingham; **White Oak Mountain**—11 acres, Pittsylvania. Lakes named after the county in which they are located are: **Nelson**—40 acres, **Nottoway**—188 acres (10 hp); **Orange**—124 acres; **Powhatan Upper**—32 acres; **Powhatan Lower**—29 acres; **Amelia**—100 acres; **Brunswick**—150 acres; **Frederick**—117 acres; **Fluvanna Ruritan**—50 acres; and **Albemarle**—35 acres.

Ponds are: **Bass**—10 acres, Powhatan; **Bullhead**—2 acres, Powhatan; **Chandlers**—75 acres, Westmoreland; **Gardys**—75 acres, Northumberland; **Phelps**—3 acres, Fauquier; **Sunfish**—8 acres, Powhatan. Total acreage for all of the impoundments is 3,445.

All of the public fishing lakes owned by the VDGIF are limited to electric motors only, with the exception of **Briery Creek Lake**, **Gordon** and **Nottoway**. There are no restrictions on hand, foot or sail power boats.

There are 145 additional impoundments in Virginia. Next month's column will list them.

In the meantime, be sure to write to the Virginia Department of Game and Inland Fisheries (P.O. Box 11104, Richmond, VA 23230-1104) for a free copy of the *1994 Freshwater Fishing Guide*. This publication will give you more information (including phone numbers) on the lakes and ponds listed above. □



Virginia is blessed with thousands of acres of boating water; photo by Soc Clay.

lakes with their acreage, county of location, and horsepower limitation shown are: **Airfield**—105 acres, Sussex; **Bark Camp**—48 acres, Scott/Wise; **Briery Creek**—845 acres (10 hp), Prince Edward; **Brittle**—77 acres, Fauquier; **Burke**—218 acres, Fairfax; **Burton**—76 acres, Pittsylvania; **Curtis**—91 acres, Stafford; **Connor**—110 acres, Halifax; **Game Refuge**—30 acres,

Photo TipS

By Lynda Richardson

After a successful first "assignment" last May, the *Virginia Wildlife* magazine staff and I decided to have another. As you might remember, the first competition, announced May 1993, was on patterns and textures. The contest was held as if it were a magazine assignment and the results were published in the January 1994 issue of VW.

This year, your assignment is to travel anywhere in Virginia and photograph reflections as seen in nature. This isn't as broad a category as last year's patterns and textures, but it should be just as fun and as challenging.

Entries will be judged on the photographer's use of color or lack of color, use of light, and choice of subject matter. To help you along the way, a column on reflections will appear in my June 94 "Photo Tips" column.

"Your Second Magazine Assignment" rules are as follows:

1) Photographs must be shot in 35mm slide format. (This is for ease of handling and desirability for magazine use.) Reproduction quality duplicate slides are acceptable if you don't want to send originals. Please mark slides to indicate if they are duplicates or originals.

2) Since this is an "assignment," photographs must be shot between May 1, 1994 and August 31, 1994.

3) Deadline for this assignment is September 2, 1994. All photographs must be postmarked by September 2, 1994. Mail to Photo Tips Assignment, c/o *Virginia Wildlife*, P.O. Box 11104, Richmond, VA 23230-1104. Federal Express address would be 4010 W. Broad Street, Richmond, VA 23230. I would recommend sending

Your Second Magazine "Assignment"

your photographs by certified or registered mail or by courier such as Federal Express which uses tracking numbers to locate lost packages. Submissions received after the deadline will not be considered and returned immediately.

4) All submissions must be accompanied with a self-addressed, stamped envelope (SASE) large enough to include a copy of the magazine if your submission wins. Submissions without SASEs will not be returned! Whatever mailing method you choose, don't forget to include this additional envelope with enough postage or a filled out Federal Express form including your account number for us to return your slides to you. Please do not send money, checks or loose stamps.

5) Slides will only be accepted if they are submitted in clear plastic storage sheets between two rigid pieces of cardboard. Slide sheets are available at your local camera store.

6) On the front/bottom of each slide must appear your name, address and telephone number. Also, on the front of your slide, draw an arrow to indicate the top of your slide. Number each slide. Slides will not be accepted if this information is not included on every slide.

7) Include with your entry a "Delivery Memo." This is a sheet of paper which has your name, address and telephone number at the top and a listing of your slides and total number you are sending.

Refer to each slide by number in the Delivery Memo and include any necessary caption information. Don't forget to make a copy for yourself so you can make sure we get all your slides back to you.

8) Submission limit is five slides per person.

9) Neither *Virginia Wildlife* nor Lynda Richardson will be responsible for the receipt of damaged slides or the return of slides not accompanied by a self-addressed stamped envelope.

10) Though this is an "assignment," photographers will not be financially compensated for the use of their images, expenses incurred while shooting, film and processing or time spent on assignment.

These rules might sound like a lot of trouble, but this is to give you an idea of what photographers have to go through to sell their photographs. So, take this opportunity to make it an adventure, have fun and challenge yourself! Good luck, and I will look forward to reviewing your assignments. □



This beautiful Canada Goose provides a perfect example of reflections in nature; photo by Lynda Richardson.

Recipes

By Joan Cone

MENU

Corn and Potato Chowder
Bluefish Fillets with Sauce Doria
Aunt Janie's Spoonbread
Pineapple Glazed Carrots
Shaker Spinach Toss
Blueberry Dumplings

Corn and Potato Chowder

2 bacon slices, chopped
1 small onion, chopped
1 russet potato, peeled and cut into 1/2-inch cubes
2 cups milk
1 can (15 ounces) creamed corn
1 cup fresh or frozen corn kernels
1 teaspoon dried thyme
Salt and pepper

Cook bacon in heavy large saucepan over medium heat until fat is rendered, about 3 minutes. Add onion and cook until tender, stirring occasionally, about 8 minutes. Add potato and sauté 1 minute. Add 2 cups milk and bring to boil. Reduce heat and simmer until vegetables are tender and soup thickens slightly, stirring occasionally, about 15 minutes. Add creamed corn, corn kernels and 1 teaspoon thyme to soup and simmer until heated through. Season to taste with salt and pepper. Makes 4 servings.

Bluefish Fillets with Sauce Doria

1 1/2 pounds bluefish fillets
2 tablespoons butter or margarine, melted
Salt
Paprika
Sauce Doria

Thaw fish if frozen. Cut fish fillets into serving size portions. Place fish in a single layer on a well-greased broiler pan. Pour melted butter over fish and sprinkle with salt and paprika. Broil about 4 inches from source of heat for 8 to 10 minutes or until fish flakes easily when tested with a fork. Remove fish to a warm platter and serve with Sauce Doria.

A Spring Bluefish Dinner

Sauce Doria

2 cucumbers, peeled, halved and seeded
2 tablespoons butter or margarine
1 1/2 teaspoons dried dill
1/2 cup white table wine or chicken broth
1 tablespoon cornstarch
1/4 cup water
Salt and white pepper to taste

Slice each cucumber half diagonally into 1/2-inch pieces. In a medium size skillet, melt butter and sauté cucumber pieces until transparent. Add dill and wine to skillet. Dissolve cornstarch in water and add to cucumber mixture. Simmer sauce, stirring constantly, until clear and bubbly. Add salt and pepper to taste.

Aunt Janie's Spoonbread

This excellent old family recipe was sent to me by Anne Williams of Danville, a regular reader of "Recipes."

1/2 stick butter or margarine
2 cups milk
1/2 cup cornmeal
1/2 teaspoon salt
1/2 teaspoon baking powder
Pinch of sugar
2 eggs, beaten or 1/2 cup egg substitute

Preheat oven to 450 degrees. Place the butter into a one quart casserole and heat in oven until butter is melted. Meanwhile, heat the milk in a saucepan until very hot and then stir in the cornmeal with a fork until it thickens. Take the cornmeal mixture off the stove and add salt, baking powder, sugar and eggs, beating well with the fork. Pour hot butter into the mixture and put all into the hot casserole. Bake at 450 degrees for 20 to 25 minutes or until a toothpick placed in the center comes out clean. Serve immediately! Makes 4 or 5 servings.

Pineapple Glazed Carrots

1 can (1 pound, 4 ounces) chunk

pineapple in juice
1/2 cup orange marmalade
3 cups sliced carrots, cooked

Drain pineapple, reserving 1/4 cup juice. Heat juice with marmalade. Add carrots and pineapple. Cook over low heat, turning until evenly glazed. Makes 4 to 6 servings.

*Shaker Spinach Toss

6 cups fresh spinach, torn into bite-sized pieces
4 oranges or tangerines, peeled and sectioned
6 slices bacon, crisp-cooked, drained and crumbled
1 cup peanuts, chopped

In a salad bowl, combine torn spinach, orange sections, bacon and peanuts. Add desired portion of either a French or Italian dressing over the orange-spinach mixture, tossing lightly to mix. Makes 5 to 6 servings.

Blueberry Dumplings

2 1/2 cups fresh blueberries
1/3 cup sugar
Dash salt
1 cup water
1 tablespoon lemon juice
1 cup flour
2 tablespoons sugar
2 teaspoons baking powder
1/4 teaspoon salt
1 tablespoon butter or margarine
1/2 cup milk

Bring first 4 ingredients to boiling. Cover; simmer 5 minutes. Add lemon juice. Sift dry ingredients together and cut in butter till like coarse meal. Add milk all at once and stir only till flour is dampened. Drop batter from tip of tablespoon into bubbling sauce, making 6 dumplings—do not let them overlap. Cover tightly and cook over low heat for 10 minutes without peeking. Serve hot. Makes 4 servings.

* Recipe from *Best Recipes of Alaska's Fishing Lodges*, by Adela Batin, published by Alaska Angler Publications, Fairbanks, AK, December, 1993.

Preserving in bronze what we're losing in the wild

An Endangered Species Series by Turner Sculpture

Continuing to capture the essence of Virginia's endangered species in bronze, David Turner of Turner Sculpture has created the third in his Endangered Species Series to raise funds for Virginia's Nongame and Endangered Species Program.

Turning to the wind-swept beaches and mudflats of his native Eastern Shore, David has chosen to capture the spirit of the delicate, yet spritely piping plover in bronze. Perfectly camouflaged among the speckled beaches, the piping plover can disappear from view in an instant, blending into the landscape with the help of its sand-colored body, black collar, and a black nick of a crown between the eyes.

This federally endangered shorebird is teetering on the brink of extinction, and every year we hold our breath hoping to see signs of recovery. One-quarter of the East Coast piping plover population nests on the beaches of Virginia's barrier islands, struggling to increase its numbers amid the hardships of habitat loss, nest destruction, and predators hungry for a meal of eggs or tiny young.

Like the Northern flying squirrel (featured above) and the sold-out Bewick's wren sculpture, a limited edition of 200 piping plovers will be cast and sold solely to benefit Virginia's Nongame and Endangered Species Program, the program responsible for the management and protection of all the Commonwealth's rare and endangered wildlife. The money raised from the sale of the three sculptures will provide the program with over 1/10th of its present operating budget.

Each sculpture has a purchase price of \$325. Turner Sculpture will receive \$175 to cover their production costs, while the remaining \$150 will be sent to the Virginia Department of Game and Inland Fisheries as your contribution to Virginia's Nongame and Endangered Species Fund. A tax advisor should be consulted regarding the personal tax deductibility of this contribution. Each piece sold will include a certificate of origin and a letter confirming your contribution to the future of Virginia's wildlife.

You may order either the piping plover or the Northern flying squirrel by sending a \$325 check for each signed and numbered sculpture to: Turner Sculpture, Box 128, Onley, VA 23418. For credit card orders, call: 804/787-2818.

Note: if you have already purchased a Bewick's wren or Northern flying squirrel and would like the same limited edition number in the piping plover, please send in your order as soon as possible.

Photo of piping plover approximates actual size.



*Northern flying squirrel (height: 7 inches)
by David Turner.*



TURNER
SCULPTURE



Nongame and Endangered
WILDLIFE PROGRAM
VIRGINIA DEPARTMENT OF GAME AND INLAND FISHERIES

FRESHWATER FISHES OF VIRGINIA

Robert E. Jenkins and Noel M. Burkhead



The Authority on Virginia Fishes.

Freshwater Fishes of Virginia is an in-depth look at 210 fish species. Abundantly illustrated and 1,104 pages in length, this new book is the authority on fish in Virginia. There is no other like it *anywhere*.

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